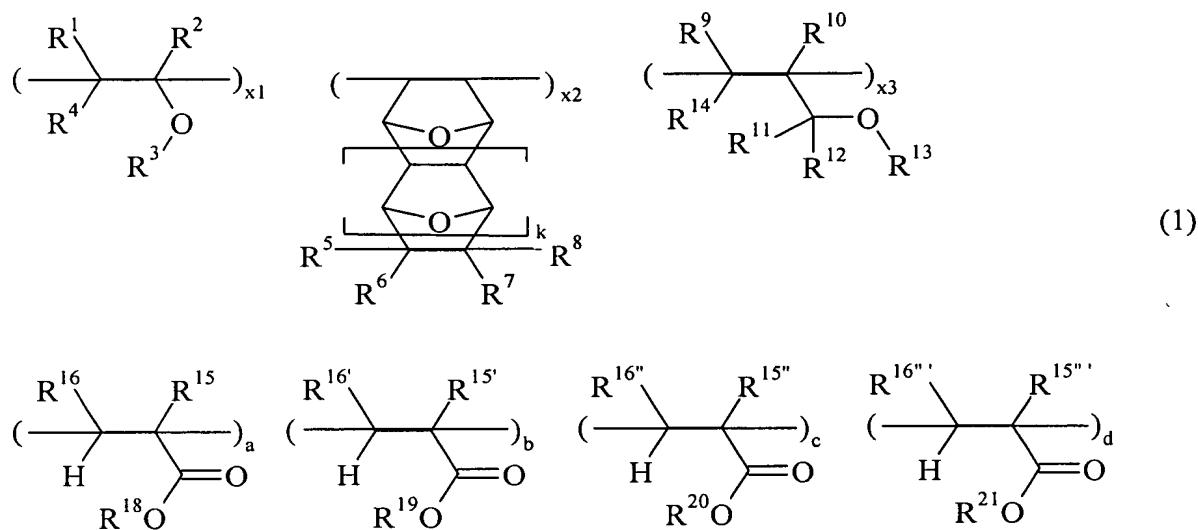


This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. **(Previously presented)** A polymer comprising recurring units of the following general formula (1) and having a weight average molecular weight of 1,000 to 500,000,



wherein R^1 and R^2 each are hydrogen or methyl,

R^3 and R^4 each are hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, and R^3 and R^4 may bond together to form a ring, wherein R^3 and R^4 together represent a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

each of R^5 to R^8 is hydrogen, a hydroxyl group or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, at least one of R^5 to R^8 contains a hetero atom, any two of R^5 to R^8 may bond together to form a

ring, wherein the ring forming two R's together represent a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

R⁹ and R¹⁰ each are hydrogen or methyl,

each of R¹¹ to R¹⁴ is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, a pair of R¹¹ and R¹², a pair of R¹¹ or R¹² and R¹³, a pair of R¹¹ or R¹² and R¹⁴, or a pair of R¹³ and R¹⁴ may bond together to form a ring, wherein each pair represents a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

R¹⁵ is hydrogen, methyl or CH₂CO₂R¹⁷,

R^{15'} is hydrogen, methyl or CH₂CO₂R^{17'},

R^{15''} is hydrogen, methyl or CH₂CO₂R^{17''},

R^{15'''} is hydrogen, methyl or CH₂CO₂R^{17'''},

R¹⁶ is hydrogen, methyl or CO₂R¹⁷,

R^{16'} is hydrogen, methyl or CO₂R^{17'},

R^{16''} is hydrogen, methyl or CO₂R^{17''},

R^{16'''} is hydrogen, methyl or CO₂R^{17'''},

R¹⁷, R^{17'}, R^{17''} and R^{17'''} may be identical or different between R¹⁵ and R¹⁶, between R^{15'} and R^{16'}, between R^{15''} and R^{16''} and between R^{15'''} and R^{16'''}, respectively, and each is a straight, branched or cyclic alkyl group of 1 to 15 carbon atoms,

R¹⁸ is hydrogen or a monovalent hydrocarbon group of 1 to 15 carbon atoms containing a carboxyl or hydroxyl group,

R¹⁹ is a monovalent hydrocarbon group of 2 to 15 carbon atoms containing at least one partial structure selected from the group consisting of ether, aldehyde, ketone, ester, carbonate, acid anhydride, amide and imide,

R^{20} is a polycyclic hydrocarbon group of 7 to 15 carbon atoms or an alkyl group containing a polycyclic hydrocarbon group,

R^{21} is an acid labile group,

k is 0 or 1,

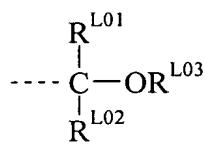
x_1, x_2, x_3, a, b, c and d represent a molar compositional ratio of the recurring units associated therewith, satisfying $x_1+x_2+x_3+a+b+c+d = 1$, x_1, x_2, x_3, a, b and c are numbers inclusive of 0, d is a number of more than 0, provided that at least two of x_1, x_2 and x_3 are not equal to 0.

2. (Canceled)

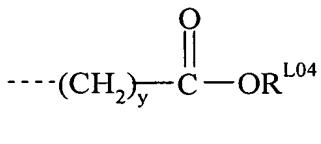
3. (Original) A resist composition comprising the polymer of claim 1.

4. (Original) A process for forming a resist pattern comprising the steps of:
applying the resist composition of claim 3 onto a substrate to form a coating,
heat treating the coating and then exposing it to high-energy radiation or electron beam through a photo mask, and
optionally heat treating the exposed coating and developing it with a developer.

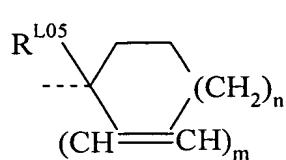
5. (Previously presented) The polymer of claim 1 wherein the acid labile group represented by R^{21} is an acid labile group selected from the group consisting of groups of the following general formulae (L1) to (L4):



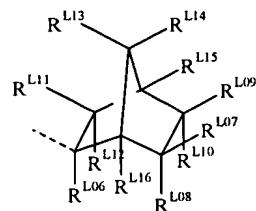
(L1)



(L2)



(L3)



(L4)

wherein the broken line denotes a free valence bond, R^{L01} and R^{L02} are hydrogen or straight, branched or cyclic alkyl groups of 1 to 18 carbon atoms, R^{L03} is a monovalent hydrocarbon group of 1 to 18 carbon atoms which may contain a hetero atom, a pair of R^{L01} and R^{L02} , R^{L01} and R^{L03} , or R^{L02} and R^{L03} may form a ring, wherein each of R^{L01} , R^{L02} and R^{L03} is a straight or branched alkylene group of 1 to 18 carbon atoms when they form a ring,

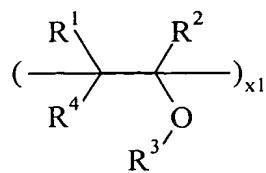
R^{L04} is a tertiary alkyl group of 4 to 20 carbon atoms, a trialkylsilyl group in which each alkyl moiety has 1 to 6 carbon atoms, an oxoalkyl group of 4 to 20 carbon atoms, or a group of formula (L1),

R^{L05} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms,

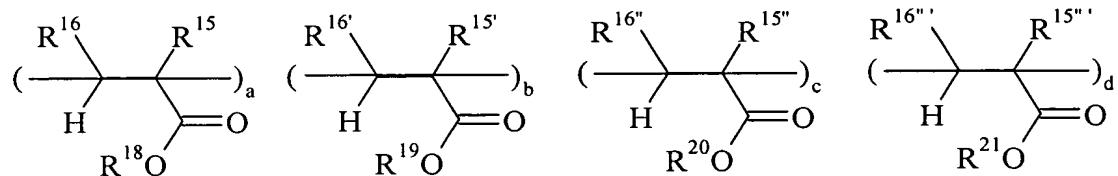
R^{L06} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms, and

R^{L07} to R^{L16} independently represent hydrogen or monovalent hydrocarbon groups of 1 to 15 carbon atoms which may contain a hetero atom, or R^{L07} to R^{L16} , taken together, form a ring, wherein each of R^{L07} to R^{L16} represents a divalent C₁-C₁₅ hydrocarbon group which may contain a hetero atom, when they form a ring, or two of R^{L07} to R^{L16} which are attached to adjoining carbon atoms may bond together directly to form a double bond.

6. (Currently Amended) A polymer comprising recurring units of the following general formula (1a) and having a weight average molecular weight of 1,000 to 500,000,



(1a)



wherein R^1 and R^2 each are hydrogen or methyl,

R^3 is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms or a straight, branched or cyclic, monovalent hydrocarbon group of 3 to 15 carbon atoms which may contain a hetero atom; and

R^4 each are is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, and or

R^3 and R^4 may bond together to form a ring, wherein R^3 and R^4 together represent a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

R^{15} is hydrogen, methyl or $CH_2CO_2R^{17}$,

$R^{15'}$ is hydrogen, methyl or $CH_2CO_2R^{17'}$,

$R^{15''}$ is hydrogen, methyl or $CH_2CO_2R^{17''}$,

$R^{15'''}$ is hydrogen, methyl or $CH_2CO_2R^{17'''}$,

R^{16} is hydrogen, methyl or CO_2R^{17} ,

$R^{16'}$ is hydrogen, methyl or $CO_2R^{17'}$,

$R^{16''}$ is hydrogen, methyl or $CO_2R^{17''}$,

$R^{16''''}$ is hydrogen, methyl or $CO_2R^{17''''}$,

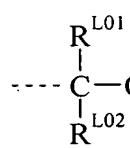
$R^{17}, R^{17'}, R^{17''}$ and $R^{17''''}$ may be identical or different between R^{15} and R^{16} , between $R^{15'}$ and $R^{16'}$, between $R^{15''}$ and $R^{16''}$, and between $R^{15''''}$ and $R^{16''''}$, respectively, and each is a straight, branched or cyclic alkyl group of 1 to 15 carbon atoms,

R^{18} is hydrogen or a monovalent hydrocarbon group of 1 to 15 carbon atoms containing a carboxyl or hydroxyl group,

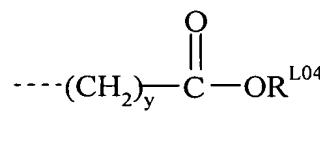
R^{19} is a monovalent hydrocarbon group of 2 to 15 carbon atoms containing at least one partial structure selected from the group consisting of ether, aldehyde, ketone, ester, carbonate, acid anhydride, amide and imide,

R^{20} is a polycyclic hydrocarbon group of 7 to 15 carbon atoms or an alkyl group containing a polycyclic hydrocarbon group,

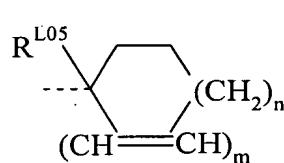
R^{21} is an acid labile group selected from the group consisting of groups of the following general formulae (L1) to (L4):



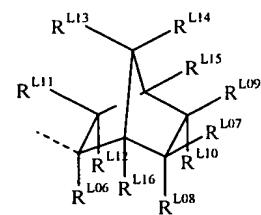
(L1)



(L2)



(L3)



(L4)

wherein the broken line denotes a free valence bond, R^{L01} and R^{L02} are hydrogen or straight, branched or cyclic alkyl groups of 1 to 18 carbon atoms, R^{L03} is a monovalent hydrocarbon group of 1 to 18 carbon atoms which may contain a hetero atom, a pair of R^{L01} and R^{L02} , R^{L01} and R^{L03} , or R^{L02} and R^{L03} may form a ring, wherein each of R^{L01} , R^{L02} and R^{L03} is a straight or branched alkylene group of 1 to 18 carbon atoms when they form a ring,

R^{L04} is a tertiary alkyl group of 4 to 20 carbon atoms, a trialkylsilyl group in which each alkyl moiety has 1 to 6 carbon atoms, an oxoalkyl group of 4 to 20 carbon atoms, or a group of formula (L1),

R^{L05} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms,

R^{L06} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms, and

R^{L07} to R^{L16} independently represent hydrogen or monovalent hydrocarbon groups of 1 to 15 carbon atoms which may contain a hetero atom, or R^{L07} to R^{L16} , taken together, form a ring, wherein each of R^{L07} to R^{L16} represents a divalent C₁-C₁₅ hydrocarbon group which may contain a hetero atom, when they form a ring, or two of R^{L01} to R^{L16} which are attached to adjoining carbon atoms may bond together directly to form a double bond,

k is 0 or 1,

x_1 , a, b, c and d represent a molar compositional ratio of the recurring units associated therewith, satisfying $x_1+a+b+c+d = 1$, a, b and c are numbers inclusive of 0, d is a number of more than 0, x_1 is a number not equal to 0.

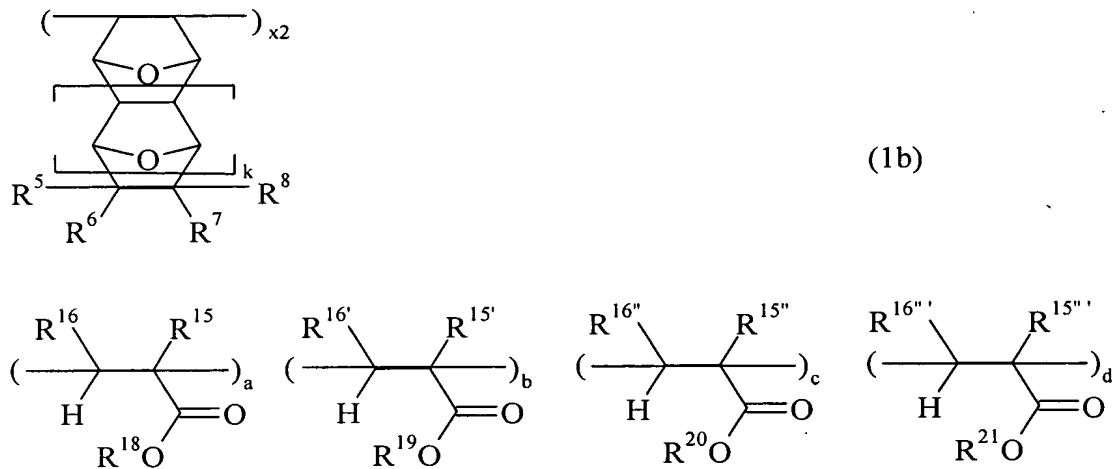
7. **(Previously presented)** A resist composition comprising the polymer of claim 6.

8. **(Previously presented)** A process for forming a resist pattern comprising the steps of:

applying the resist composition of claim 6 onto a substrate to form a coating,
heat treating the coating and then exposing it to high-energy radiation or electron beam through a photo mask, and

optionally heat treating the exposed coating and developing it with a developer.

9. **(Currently Amended)** A polymer comprising recurring units of the following general formula (1b) and having a weight average molecular weight of 1,000 to 500,000,



wherein each of R^5 to R^8 is hydrogen, a hydroxyl group or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, at least one of R^5 to R^8 contains a hetero atom, any two of R^5 to R^8 may bond together to form a ring, wherein the ring-forming two R's together represent a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

R^{15} is hydrogen, methyl or $CH_2CO_2R^{17}$,

$R^{15'}$ is hydrogen, methyl or $CH_2CO_2R^{17}$,

$R^{15''}$ is hydrogen, methyl or $CH_2CO_2R^{17''}$,

$R^{15''''}$ is hydrogen, methyl or $CH_2CO_2R^{17''''}$,

R^{16} is hydrogen, methyl or CO_2R^{17} ,

$R^{16'}$ is hydrogen, methyl or CO_2R^{17} ,

$R^{16''}$ is hydrogen, methyl or $CO_2R^{17''}$,

$R^{16''}$ is hydrogen, methyl or $CO_2R^{17''}$,

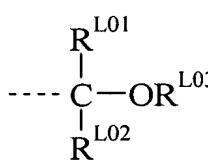
R^{17} , $R^{17'}$, $R^{17''}$ and $R^{17'''}$ may be identical or different between R^{15} and R^{16} , between $R^{15'}$ and $R^{16'}$, between $R^{15''}$ and $R^{16''}$, and between $R^{15'''}$ and $R^{16'''}$, respectively, and each is a straight, branched or cyclic alkyl group of 1 to 15 carbon atoms,

R^{18} is hydrogen or a monovalent hydrocarbon group of 1 to 15 carbon atoms containing a carboxyl or hydroxyl group,

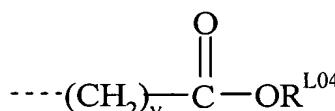
R^{19} is a monovalent hydrocarbon group of 2 to 15 carbon atoms containing at least one partial structure selected from the group consisting of ether, aldehyde, ketone, ester, carbonate, acid anhydride, amide and imide,

R^{20} is a polycyclic hydrocarbon group of 7 to 15 carbon atoms or an alkyl group containing a polycyclic hydrocarbon group,

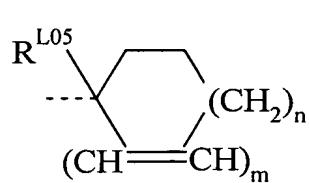
R^{21} is an acid labile group selected from the group consisting of groups of the following general formulae (L1) to (L4):



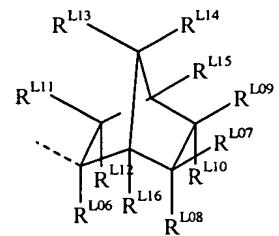
(L1)



(L2)



(L3)



(L4)

wherein the broken line denotes a free valence bond, R^{L01} and R^{L02} are hydrogen or straight branched or cyclic alkyl groups of 1 to 18 carbon atoms, R^{L03} is a monovalent hydrocarbon group of 1 to 18 carbon atoms which may contain a hetero atom, a pair of R^{L01} and R^{L02} , R^{L01} and R^{L03} , or R^{L02} and R^{L03} may form a ring, wherein each of R^{L01} , R^{L02} and R^{L03} is a straight or branched alkylene group of 1 to 18 carbon atoms when they form a ring,

R^{L04} is a tertiary alkyl group of 4 to 20 carbon atoms, a trialkylsilyl group in which each alkyl moiety has 1 to 6 carbon atoms, an oxoalkyl group of 4 to 20 carbon atoms, or a group of formula (L1),

R^{L05} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms,

R^{L06} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms, and

R^{L07} to R^{L16} independently represent hydrogen or monovalent hydrocarbon groups of 1 to 15 carbon atoms which may contain a hetero atom, or R^{L07} to R^{L16} , taken together, form a ring,

wherein each of R^{L07} to R^{L16} represents a divalent C₁-C₁₅ hydrocarbon group which may contain a hetero atom, when they form a ring, or two of R^{L07} to R^{L16} which are attached to adjoining carbon atoms may bond together directly to form a double bond,

k is 0 or 1,

x₂, a, b, c and d represent a molar compositional ratio of the recurring units associated therewith, satisfying x₂+a+b+c+d = 1, a, b and c are numbers inclusive of 0, d is a number of more than 0, x₂ is a number not equal to 0.

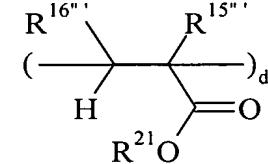
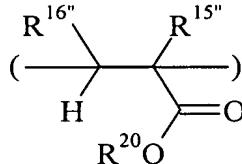
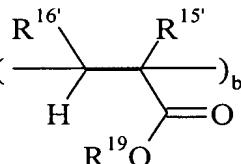
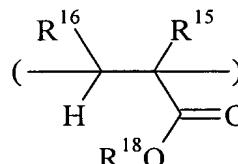
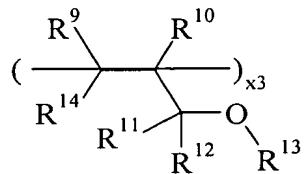
10. (Canceled)

11. (Previously presented) A resist composition comprising the polymer of claim 9.

12. **(Previously presented)** A process for forming a resist pattern comprising the steps of:

applying the resist composition of claim 9 onto a substrate to form a coating,
heat treating the coating and then exposing it to high-energy radiation or electron beam through a photo mask, and
optionally heat treating the exposed coating and developing it with a developer.

13. **(Currently Amended)** A polymer comprising recurring units of the following general formula (1c) and having a weight average molecular weight of 1,000 to 500,000,



wherein R⁹ and R¹⁰ each are hydrogen or methyl,

each of R¹¹ to R¹² is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms,

each of R¹⁴ R¹³ to R¹⁴ is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, a pair of R¹¹ and R¹², a pair of R¹¹ or R¹² and R¹³, a pair of R¹¹ or R¹² and R¹⁴, or a pair of R¹³ and R¹⁴ may bond together to form a ring, wherein each pair represents a straight, branched or cyclic,

divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

R^{15} is hydrogen, methyl or $CH_2CO_2R^{17}$,

$R^{15'}$ is hydrogen, methyl or $CH_2CO_2R^{17'}$,

$R^{15''}$ is hydrogen, methyl or $CH_2CO_2R^{17''}$,

$R^{15'''}$ is hydrogen, methyl or $CH_2CO_2R^{17'''}$,

R^{16} is hydrogen, methyl or CO_2R^{17} ,

$R^{16'}$ is hydrogen, methyl or $CO_2R^{17'}$,

$R^{16''}$ is hydrogen, methyl or $CO_2R^{17''}$,

$R^{16'''}$ is hydrogen, methyl or $CO_2R^{17'''}$,

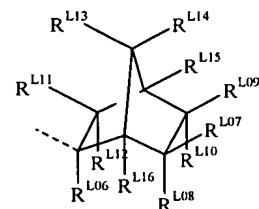
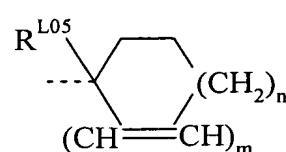
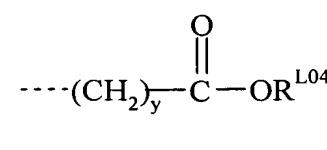
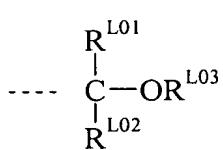
R^{17} , $R^{17'}$, $R^{17''}$ and $R^{17'''}$ may be identical or different between R^{15} and R^{16} , between $R^{15'}$ and $R^{16'}$, between $R^{15''}$ and $R^{16''}$, and between $R^{15'''}$ and $R^{16'''}$, respectively, and each is a straight, branched or cyclic alkyl group of 1 to 15 carbon atoms,

R^{18} is hydrogen or a monovalent hydrocarbon group of 1 to 15 carbon atoms containing a carboxyl or hydroxyl group,

R^{19} is a monovalent hydrocarbon group of 2 to 15 carbon atoms containing at least one partial structure selected from the group consisting of ether, aldehyde, ketone, ester, carbonate, acid anhydride, amide and imide,

R^{20} is a polycyclic hydrocarbon group of 7 to 15 carbon atoms or an alkyl group containing a polycyclic hydrocarbon group,

R^{21} is an acid labile group selected from the group consisting of groups of the following general formulae (L1) to (L4):



wherein the broken line denotes a free valence bond, R^{L01} and R^{L02} are hydrogen or straight, branched or cyclic alkyl groups of 1 to 18 carbon atoms, R^{L03} is a monovalent hydrocarbon group of 1 to 18 carbon atoms which may contain a hetero atom, a pair of R^{L01} and R^{L02} , R^{L01} and R^{L03} , or R^{L02} and R^{L03} may form a ring, wherein each of R^{L01} , R^{L02} and R^{L03} is a straight or branched alkylene group of 1 to 18 carbon atoms when they form a ring,

R^{L04} is a tertiary alkyl group of 4 to 20 carbon atoms, a trialkylsilyl group in which each alkyl moiety has 1 to 6 carbon atoms, an oxoalkyl group of 4 to 20 carbon atoms, or a group of formula (L1),

R^{L05} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms,

R^{L06} is a monovalent hydrocarbon group of 1 to 8 carbon atoms which may contain a hetero atom or a substituted or unsubstituted aryl group of 6 to 20 carbon atoms, and

R^{L07} to R^{L16} independently represent hydrogen or monovalent hydrocarbon groups of 1 to 15 carbon atoms which may contain a hetero atom, or R^{L07} to R^{L16} , taken together, form a ring, wherein each of R^{L07} to R^{L16} represents a divalent C₁-C₁₅, hydrocarbon group which may contain a hetero atom, when they form a ring, or two of R^{L07} to R^{L16} which are attached to adjoining carbon atoms may bond together directly to form a double bond,

k is 0 or 1,

x_3 , a, b, c and d represent a molar compositional ratio of the recurring units associated therewith, satisfying $x_3+a+b+c+d = 1$, x_3 , a, b and c are numbers inclusive of 0, d is a number of more than 0, and x_3 is a number not equal to 0.

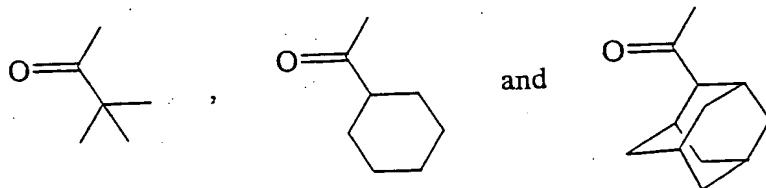
14. (Previously presented) A resist composition comprising the polymer of claim 13.

15. (Previously presented) A process for forming a resist pattern comprising the steps of:

applying the resist composition of claim 13 onto a substrate to form a coating,
heat treating the coating and then exposing it to high-energy radiation or electron beam through a photo mask, and
optionally heat treating the exposed coating and developing it with a developer.

16. (New) The polymer of claim 6, wherein in formula (1a),

R^3 is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms or a group selected from those of the following formulae:



; and

R^4 is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, or

R^3 and R^4 may bond together to form a ring, wherein R^3 and R^4 together represent a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom.